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Amendment
November 22, 2005
A-1559

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) ~~An~~ A conformal enhanced vision system for mobile vehicles, comprising:

an array of vision sensors ~~fixedly~~ mounted on the exterior of a vehicle, each sensor ~~comprising a non-turret mounted immovable sensor and~~ being capable of generating image signals;

a recording medium for storing the image signals from the array of vision sensors;

a processor for sampling the stored image signals from the recording medium and producing an output signal therefrom;

a display connected to receive the output signal from the processor and superimpose ~~it~~ images generated by the output signal on a see-through visor which also selectively permits an operator to view ~~actual~~ real images disposed in front of said visor; and

a tracking system associated with the display that monitors the movement of the head of the operator and transmits a tracking signal to the processor, the processor producing the output signal based on feedback from the tracking signal;

wherein both the images generated by the output signal and the real images are in conformity with one another, to create a seamless effect for the operator.

2. (Previously Amended) The system of claim 1, wherein the vehicle is an aircraft, and wherein the array of vision sensors is mounted close to the cockpit area such that the image signals originate from a location proximate the wearer of the display.

3. (Original) The system of claim 2, wherein the array of vision sensors is mounted in the upper radome area of the nose of the aircraft.

4. (Original) The system of claim 1, wherein the vision sensors are infrared sensors, and wherein one of the infrared sensors has higher resolution than the others and is forward-looking.

5. (Original) The system of claim 4, wherein the higher resolution infrared sensor is located in the center of the array of vision sensors.

6. (Original) The system of claim 1, wherein the vehicle is an aircraft, and wherein the array of vision sensors is mounted in the nose area and has a downwardly-looking elevational field-of-view.

7. (Original) The system of claim 6, wherein the array of vision sensors has an elevational field-of-view of approximately 24°.

8. (Original) The system of claim 1, wherein the vehicle is an aircraft, and wherein the array of vision sensors is mounted in the nose area and has a field-of-view straddling the horizontal horizon.

9. (Original) The system of claim 8, wherein the array of vision sensors has an elevational field-of-view of approximately 51°.

10. (Original) The system of claim 1, wherein the array of vision sensors provides at least a hemispherical field-of-view.

11. (Original) The system of claim 10, wherein the array vision sensors provides a spherical field-of-view.

12. (Original) The system of claim 1, wherein at least one of the vision sensors additionally provides an infrared search and track function.

13. (Original) The system of claim 1, further including at least one other sensor separate from the array of vision sensors that provides a separate signal to the processor that then combines it with the output signal.

14. (Original) The system of claim 13, wherein the one other sensor is a vision sensor oriented differently than the array of vision sensors.

15. (Original) The system of claim 14, wherein the array of vision sensors is forward-looking, and wherein the one other vision sensor is rearward-looking.

16. (Original) The system of claim 14, wherein the array of vision sensors provide a series of adjacent image signals that are combined by the processor into a wide field-of-view output signal, and wherein the signal from the one other vision sensor is overlaid on the wide field-of-view output signal as a picture-in-picture image.

17. (Previously Amended) The system of claim 13, wherein the one other sensor generates a real-time map signal that is combined by the processor into the output signal and displayed on the display outside an image produced by the array of vision sensors.

18. (Original) The system of claim 13, wherein the one other sensor monitors an operational parameter of the vehicle and generates a corresponding signal.

19. (Original) The system of claim 18, wherein the operational parameter of the vehicle is selected from the group consisting of:

speed;
altitude;
attitude; and

engine status.

20. (Previously Amended) The system of claim 1, and further including a manual input device to the processor, wherein the output signal may be manually disabled in select areas on the helmet-mounted display.

21. (Previously Presented) The system of claim 1, wherein said display comprises a helmet-mounted display.

22. (Currently Amended) ~~An~~ A conformal enhanced vision system for mobile vehicles, comprising:

an array of vision sensors ~~immovably~~ mounted on the exterior of a vehicle, each sensor being capable of generating image signals;

a processor for producing an output signal from a selected sampling of said image signals;

a display connected to receive the output signal from the processor and superimpose ~~it~~ images generated by the output signal on a see-through screen which also selectively permits an operator to view actual images disposed in front of said screen; and

a controller for controlling an intensity of light permitted to pass through said screen and for alternatively selectively disabling selected regions of said screen so that light cannot pass through those selected regions;

wherein both the images generated by the output signal and the actual images are in conformity with one another, to create a seamless effect for the operator.

23. (Previously Presented) The system of claim 22, wherein said display comprises a helmet-mounted display, and said screen comprises a helmet visor.

24. (Previously Presented) The system of claim 23, and further comprising a tracking system associated with the helmet-mounted display that monitors the movement

of the head of the wearer of the display and transmits a tracking signal to the processor, the processor producing the output signal based on feedback from the tracking signal.

25. (Previously Presented) The system of claim 24, wherein said tracking system comprises an emitter fixedly mounted on a helmet of the operator and a detector disposed in spaced relation to said emitter.

26. (Previously Presented) The system of claim 22, wherein said controller includes a manual override capability so that the operator can selectively manually control and select particular output images from various ones of said sensors.

27. (New) The system as recited in Claim 1, wherein each vision sensor is fixedly mounted on the vehicle and comprises a non-turret mounted immovable sensor.

28. (New) The system as recited in Claim 22, wherein said vision sensors are immovably mounted on the vehicle.